IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert J. LEVY *et al.*

Title: ***REVERSE GENE THERAPY***

Appl. No.: 09/487,851

Filing Date: January 19, 2000

Examiner: Q. Janice Li

Art Unit: 1632

REQUEST FOR CONTINUANCE OF PROSECUTION

Commissioner for Patents
Washington, D.C. 20231

Sir:

This communication is responsive to an office action mailed November 5, 2001, in the above-captioned application. Pursuant to M.P.E.P. § 709, applicants respectfully request a continuance of prosecution in this application.

Respectfully submitted,

Date: 5 March 2002 By S. G. Bent

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 047172/0154

In re patent application of

Robert J. Levy *et al.*

Filed: January 19, 2000 Group Art Unit: 1632

Serial No.: 09/487,851 Examiner: Q. Janice Li

Title: ***REVERSE GENE THERAPY***

Supplemental Response

Commissioner for Patents
Washington, D.C. 20231

Sir:

Regarding the Office Action mailed February 20, 2001, applicants' counsel filed a response, in the PTO mailroom, on August 20, 2001. This supplemental response illuminates additional data that applicants request the examiner to consider with the August 20st response.

In the aforementioned action the examiner rejected claims 1-38 and 65-68, contending the absence of an enabling specification. With respect to mutant HERG expression, the examiner stated that "the specification fails to show the expressed protein influenced biophysical function of the K^+ channel in any way...and fails to show the delivered expression vector has any effect on reducing myocardial conductivity" (office action at 4).

Without acquiescing to the examiner's underlying premise for rejection, applicants here submit additional data, detailed in APPENDIX B hereto, that substantiate the enabling quality of the present specification.

In conformance with the teachings of the specification, applicants demonstrate expression and membrane-localization of both the WT and mutant channels, via confocal microscopic examination of HEK293 cells transfected with an expression vector that encoded either the wild-type (WT) or the mutant Q9E MiRP channel (see Figure 2). Also, patch clamp studies indicated that Q9E is quiescent in transfected cells until clarithromycin is administered. Following antibiotic treatment, the IK_r current diminishes dramatically (Figure 2). Not only did the mutant channel correctly localize to the cell membrane,

therefore, but also influenced biophysical function of the K^+ channel normally present in the cells.

Furthermore, confocal microscopic examination of mesenchymal stem cells and pig myocytes, respectively, indicates successful transfection and membrane localization of the WT and Q9E MiRP channels *in vitro* (Figure 3) and *in vivo,* respectively (Figure 4). With these data and the other results mentioned above, applicants submit that there is no reasonable basis for questioning whether the specification enables the skilled person to implement the reverse gene therapy approach, as claimed, in treating arrhythmia and other disorders.

Applicants therefore renew their request for an early indication of allowable subject matter. The examiner is invited to contact the undersigned, should she feel that any issue requires further discussion.

Respectfully submitted,

5 March 2002
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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.